

WHAT IS CLAIMED IS:

- 1 1. A combination of a multiple disk drive storage apparatus and
2 a plurality of removable disk drive modules, the disk drive storage apparatus includes
3 a housing having an opening in a front side that is further divided into a plurality of
4 slots and a motherboard disposed within the housing, each of the disk drive modules
5 is received in one of the slots of the housing, wherein each of the disk drive modules
6 comprises:
7 a disk drive having a first connector that is received by a second
8 connector of the motherboard when the disk drive module is placed in the slot;
9 a carrier body with a front portion and a rear portion, the front portion
10 being disposed in the opening in the front side of the housing and the rear portion
11 being disposed within the housing when the disk drive module is placed in one of the
12 slots, a latch integrally formed on the carrier body that engages the housing and is
13 accessible from the front side of the housing, the carrier body having an integrally
14 formed ejection spring that engages a member disposed within the housing; and
15 wherein the disk drive module may be removed by disengaging the
16 latch from the housing, the ejection spring exerting a biasing force on the member
17 disconnecting the first connector from the second connector and urging the disk drive
18 module out of the housing through the opening in the front side of the housing.
- 1 2. The combination of claim 1 wherein the disk drive is a small
2 form factor disk drive.
- 1 3. The combination of claim 1 wherein the ejection spring is
2 disposed proximate the rear portion of the carrier body.
- 1 4. The combination of claim 1 wherein the member is a portion
2 of the motherboard.
- 1 5. The combination of claim 1, wherein the carrier body further
2 comprises a front wall that spans at least a portion of the opening in the front side of

3 the housing, wherein the front wall restricts the flow of air through the opening and
4 seals the multiple disk drive storage apparatus for air flow retention.

1 6. The combination of claim 1, wherein the carrier body further
2 comprises a side wall having a surface for receiving an informational overlay.

1 7. The combination of claim 1, wherein the carrier body further
2 comprises:

3 a light pipe integrally formed on the carrier body, the light pipe
4 extending from the rear portion of the carrier body to the front portion of the carrier
5 body;

6 the motherboard having at least one status light,

7 the light pipe being aligned with the status light; and

8 wherein the light pipe transmits light from the status light to the front
9 portion of the carrier body when the disk drive module is placed in the slot.

1 8. The combination of claim 1 wherein the carrier is molded in
2 one piece.

1 9. The combination of claim 1 wherein the carrier is molded from
2 a polycarbonate polymer.

1 10. The combination of claim 1 further comprising a power source
2 for supplying power to the multiple disk drive storage apparatus, wherein the power
3 source is disposed in a modified carrier and is removable from the housing in the
4 same manner as one of the disk drive modules.

1 11. A disk drive module comprising:

2 a disk drive;

3 a carrier body having an open sided cavity defined by the carrier body,
4 the disk drive being secured within the cavity; and

5 wherein the carrier and the disk drive have first and second
cooperating surface features that create a snap-fit to retain the disk drive in the
cavity.

1 12. The disk drive module of claim 11, the disk drive has an outer
2 case, and wherein the first surface feature is at least one recess formed in the outer
3 case, the carrier body providing the second surface feature, wherein the second
4 surface feature is at least one protrusion; and wherein each one of the protrusions is
5 received in one of the recesses.

1 13. The disk drive module of claim 12, wherein the recess is a
2 threaded hole.

1 14. The disk drive module of claim 11, wherein the carrier body
2 flexes as the protrusion is inserted into the recess and as the protrusion is removed
3 from the recess.

1 15. In combination, a multiple disk drive storage apparatus and a
2 plurality of removable disk drive modules, the disk drive storage apparatus including
3 a housing having a front side and a motherboard disposed within the housing, the
4 motherboard having at least one light emitting member, wherein each of the disk
5 drive modules comprises:
6 a disk drive;
7 a one piece molded carrier body that at least partially encloses the disk
8 drive, the carrier body having a front portion and a rear portion, the front portion
9 being disposed in the front side of the housing and the rear portion being disposed
10 within the housing when the disk drive module is placed in the housing, a light pipe
11 integrally formed as part of the carrier body that extends from the rear portion of the
12 carrier body to the front portion of the carrier body, the light pipe being disposed
13 adjacent the light emitting member inside the housing and transmitting light to the
14 front portion of the carrier body.

1 16. The combination of claim 15 wherein the light emitting
2 member is a light emitting diode.

1 17. The combination of claim 15 wherein the light emitting
2 member is a status light that indicates an operational condition of the disk drive as
3 detected by the motherboard.

1 18. The combination of claim 15 wherein the carrier is molded
2 from a polycarbonate polymer.